

# COMPUTER NETWORKING TECHNOLOGY, Certificate - 4230

Engineering & Technology Department  
CIP Code: 11.0901

The Computer Networking certificate prepares students to work in the field of information technology in roles such as network technician, network administrator, systems administrator and customer support. They are trained to design, install, configure, troubleshoot and maintain networks. This program is also valuable to students who are currently employed within the field and wish to update their computer networking knowledge and skills for advancement. The program includes the study of data communications, telecommunications, Windows and Linux Server administration, information security fundamentals, PC repair, TCP/IP, cabling, terminations, network connections, cable testers, network analyzers, NIC's, hubs, bridges, switches, and routers. Elective courses allow the students to learn specialized topics such as Cisco Routing and Switching, Voice over IP (VoIP), Wireless Networking Administration and Virtualization and Cloud Computing. The program is vendor neutral and coordinates with national standards from the Computing Technology Industry Association (CompTIA). The program may be completed at the Harrisburg Campus by taking some courses through Virtual Learning.

## Career Opportunities

Computer networking encompasses a broad range of jobs and job titles for CNT graduates including network support technicians, network planning analysts, network coordinators, telecommunications specialists, information technology specialists, consultants, market representatives, and related information technologist positions.

**(SOC Code: 15-1150 Computer Support Specialists)**

## Competency Profile

This curriculum is designed to prepare students to:

- List and describe TCP/IP layers, layer interactions, protocols and applications
- Install, connect, and configure network hardware and software to meet common requirements
- Design and Implement an internetwork including IP addressing, subnetting, routing, switching, Virtual Local Area Networks (VLANs), and network design documentation
- Describe the technologies associated with network communications, including signaling, noise, error detection and correction, flow control techniques, data compression, and encoding technology
- Describe technical aspects of Ethernet operation including access technologies, bandwidths, standards, VLANs and electronic connecting devices
- List and describe common Wide Area Network (WAN) technologies, topologies and associated protocols and devices
- Demonstrate proper troubleshooting methods while implementing networks
- Design, install, test, troubleshoot and certify communications wiring systems
- Install, test and troubleshoot PC hardware and windows desktop operating systems
- Demonstrate professional interaction with end users in a technical support environment utilizing troubleshooting, escalation channels, help desk software and communications skills
- Install, maintain, administer and support Linux server operating systems
- Install, maintain, administer and support Windows server operating systems including Active Directory
- List and describe common legal, ethical, and business requirements for securing information
- Utilize security tools and common best practices to design a secure network architecture

## PROGRAM REQUIREMENTS (TOTAL CREDITS = 34)

General Education	Major Requirements	Other Required Courses
	CIS 222 Intro to Windows Servers	3
	CIS 227 Technical Support	3
	CIS 264 Fundamentals of Linux Administration	3
	CISE 200 Information Security Fundamentals*	3
	CNT 120 Network Communication Technology I	3
	CNT 125 Network Communication Technology II	4
	CNT 140 The Physical Network	3
	CNT 220 Internetworking	5
	ELEC 125 Introduction to PC Technology	3
	ELEC 126 Installing & Troubleshooting PCs	4
		34

## **RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part time students can complete this program by taking one or more courses each semester.

<b>Summer I</b>		<b>Fall Semester I</b>		<b>Spring Semester I</b>	
CNT 120	3	CIS 264	3	CIS 222	3
ELEC 125	3	CNT 125	4	CIS 227	3
		CNT 140	3	CISE 200*	3
		ELEC 126	4	CNT 220	5

*\*There is a prerequisite of ENGL 101 for this course.*